

What is claimed is:

1. A distributed intelligence, wireless, light-directed pick/put system comprising:

a. at least two mobile units comprising, each of said at least two mobile units

comprising:

5 i. a portable computer comprising data input means, data and
instruction presentation means, and programmed capability to associate input facility location data
with unique light addresses and with specific put locations;

10 ii. a put-controller unit comprising a bi-directional, transmitter/receiver
component and an intelligent circuit element capable of controlling intelligent light assemblies, said
put-controller unit having a unique controller address and being in bi-directional communication
with said portable computer through a bi-directional, dual transmitter/receiver element;

15 iii. a mobile element capable of being propelled through a storage
facility, wherein said put-controller unit is positioned on said mobile element, and said portable
computer is positioned on said mobile element, and said bi-directional, dual transmitter/receiver
element is positioned on said mobile element, and further comprising a power source for said
portable computer and said put-controller unit;

20 iv. one or more storage receptacles positioned on said mobile element
wherein each of said one or more receptacles has associated with it an intelligent light assembly
comprising an intelligent circuit component, a visual display means, and a momentary contact
switch means, and further wherein each of said intelligent light assemblies is positioned adjacent to
a specific receptacle; and

25 v. said bi-directional, dual transmitter/receiver element comprising a
wired communication means for connecting to said portable computer and communication means
for connecting to said put-controller unit and to a pick-controller unit; and

b. at least one stationary unit comprising: said pick-controller unit comprising a

transmitter/receiver component and an intelligent circuitry element wherein said pick-controller unit has a unique controller address and is in wireless, bi-directional communication with said bi-directional, dual transmitter/receiver element, and further wherein said pick-controller element is in electrical communication with a plurality of intelligent light assemblies each of which intelligent

5 light assemblies comprises an intelligent circuit component, a visual display means, and a momentary contact switch means, and further wherein each of said intelligent light assemblies is positioned adjacent to a specific, physical storage location in a bay of storage locations, such that each of said intelligent light assemblies contains a specific light address associated with the physical location at which it is positioned.

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2. The distributed intelligence, wireless, light-directed pick/put system of claim 1 wherein said data and instruction presentation means comprise visual display means.

15 3. The distributed intelligence, wireless, light-directed pick/put system of claim 1 wherein said data and instruction presentation means comprise enunciation means.

4. The distributed intelligence, wireless, light-directed pick/put system of claim 1 wherein said data and instruction presentation means comprise visual and enunciation means.

20 5. The distributed intelligence, wireless, light-directed pick/put system of claim 1 wherein said portable computer receives data and information via wireless communication from a second computer.

25 6. The distributed intelligence, wireless, light-directed pick/put system of claim 1 wherein said portable computer receives data and information via keypad entry.

7. The distributed intelligence, wireless, light-directed pick/put system of claim 1 wherein said portable computer receives data and information via wired communication from a second computer.

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8. The distributed intelligence, wireless, light-directed pick/put system of claim 1 wherein said portable computer and said bi-directional, dual transmitter/receiver element are removably positioned on said mobile element and further wherein said bi-directional, dual transmitter/receiver element is integral to said portable computer.

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9. A method of retrieving items from indicated storage locations and of placing said retrieved items into designated receptacles comprising the steps of:

- a. providing mobile elements;
- b. associating a specific, portable computer with each of said mobile elements;
- c. programming said specific, portable computer to translate pick order item

15 locations to specific pick light addresses and to specific put light addresses;

- d. entering pick orders into said at least one portable computer;
- e. activating a communication system that allows identification of the location

20 and quantities of stored items to be retrieved;

25 f. instructing each operator of each of said mobile elements to travel to a specific bay of storage locations in response to instructions communicated by said portable computer;

g. identifying both location from which specified, stored items are to be retrieved and the quantity of each of said stored items to be retrieved as indicated by intelligent light assemblies positioned at storage locations;

h. retrieving said designated quantity of an item from the indicated location and placing indicated quantities of said item into specific receptacles on said mobile element as indicated by intelligent light assemblies associated with each of said receptacles;

i. operating a momentary contact switch to indicate that the pick has been
5 completed;

j. repeating the steps of retrieving designated quantities of items from indicated locations and placing indicated quantities of said retrieved, designated items into designated receptacles until at least one order is filled; and

k. unloading said receptacles at a designated station and returning said mobile
10 element to repeat the entire pick/put process for a new set of orders.

10. The method of claim 9 wherein the step of retrieving the desired quantity of an item further comprises the steps of reporting to the portable computer any insufficiency of items in the indicated location and thereby reporting an incomplete pick.

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11. A distributed intelligence communication system comprising:

a. means for enabling a pick-controller unit to engage in two-way communication with a computer by means of a bi-directional, dual transmitter/receiver element and for enabling said pick-controller unit to engage in two-way communication with a plurality of first intelligent light assemblies;

b. means for enabling at least one put-controller unit to engage in two-way communication with a computer by means of a bi-directional, dual transmitter/receiver element and for enabling said at least one put-controller unit to engage in two-way communication with a plurality of second intelligent light assemblies;

c. means for enabling a first intelligent light assembly to respond to a coded

message transmitted from said computer, through said pick-controller unit thereby activating a specific light and further activating a display of unique instructions and related information to an operator; and

5 d. means for enabling a second intelligent light assembly to be activated in coordination with the activation of said first intelligent light assembly in a prescribed, coordinated manner.

10 12. The distributed intelligence communication system of claim 11 further comprising programmed means for allowing an operator to assign a unique light address to each of said plurality of first intelligent light assemblies and to each of said plurality of second intelligent light assemblies, and further comprising programmed means for enabling an operator to indicate that a designated task has been completed.

15 13. The distributed intelligence communication system of claim 11 wherein said means for enabling said pick-controller unit comprises circuitry capable of being programmed to recognize and respond to coded information and further to transmit programmed instructions to said first plurality of intelligent light assemblies.

20 14. The distributed intelligence communication system of claim 11 wherein said means for enabling said at least one put-controller unit comprises circuitry capable of being programmed to recognize and respond to coded information and further to transmit programmed instructions to said plurality of second intelligent light assemblies.

25 15. The distributed intelligence communication system of claim 11 comprises programmed means for enabling an operator to assign unique light addresses to each of said plurality of first

intelligent light assemblies.

16. The distributed intelligence communication system of claim 11 wherein said pick-controller units and each of said at least one put-controller units and each of said plurality of first intelligent light assemblies and each of said plurality of second intelligent light assemblies is capable of being programmed individually to receive coded instructions to which each responds.

17. The distributed intelligence communication system of claim 11 comprises programmed means for enabling an operator to assign unique light addresses to each of said plurality of first intelligent light assemblies and to each of said plurality of second intelligent light assemblies, and further wherein said pick-controller units and said at least one put-controller units and each of said plurality of first intelligent light assemblies and each of said plurality of second intelligent light assemblies is capable of being individually programmed to receive coded instructions to which each responds.